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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,986	09/07/2005	Richard Hellberg	4147-118	1373

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ARLINGTON, VA 22203

EXAMINER
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CHOE, HENRY

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/537,986

Applicant(s)

HELLBERG ET AL.

Examiner

Henry K. Choe

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-25 is/are allowed.
- 6) ☒ Claim(s) 1,8,10,17,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 11-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/9/05</u> .                                                  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 8-10 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (Fig. 1 of drawing) in view of applicant's admitted prior art (Fig. 2 of drawing).

Regarding claims 1 and 10, applicant's admitted prior art (Fig. 1 of drawing) discloses an amplifier circuit comprising a first power amplifier (12) which is configured as an auxiliary amplifier of a Doherty amplifier and connected to an output node (a node between the quarter wavelength 16 and auxiliary amplifier 12), and a main amplifier (10). However, applicant's admitted prior art (Fig. 1 of drawing) does not disclose an even number of further power amplifiers configured into at least one Chireix pair connected to the output node. Applicant's admitted prior art (Fig. 2 of drawing) discloses an amplifier circuit comprising an even number of further power amplifiers (28, 30) configured into at least one Chireix pair connected to the output node (a node between the upper quarter wavelength ZL and lower quarter wavelength ZL). It would have been obvious to substitute Chireix pair of power amplifier (Fig. 2 of drawing) in place of main amplifier of applicant's admitted prior art (Fig. 1 of drawing) since the main amplifier of applicant's admitted prior art (Fig. 1 of drawing) is a generic amplifier thereby

suggesting that any equivalent amplifier would have been usable in main amplifier of applicant's admitted prior art (Fig. 1 of drawing).

Regarding claims 8 and 17, the combination between two applicant's admitted prior arts (Figs 1 and 2 of drawing) form a stand alone composite amplifier.

Regarding claims 9 and 18, the combination between two applicant's admitted prior arts (Figs 1 and 2 of drawing) form a part of a composite amplifier including further power amplifiers (28 and 30 of Fig. 2 of drawing).

Regarding claims 19 and 20, the limitations recited in the claims are obvious based on the intended use of the invention.

### ***Allowable Subject Matter***

Claims 2-7 and 11-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Reasons for Allowance***

Claims 21-25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 21, the closest prior art of record, applicant's admitted prior art (Fig. 1 of drawing) does not disclose the following limitations: driving a first power amplifier with substantially zero current amplitudes below and substantially linear current amplitude above a predetermined output node voltage.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent numbers (6,940,349; 6,897,721) are the Doherty amplifiers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Choe whose telephone number is (571) 272-1760.



**HENRY CHOE**  
**PRIMARY EXAMINER**

#1154